

Appl. No. 09/933,125
Amdt. Dated: May 26, 2004
Reply to Office Action of: April 26, 2004

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

Claims 1 to 58: Canceled.

Claim 59 (Original): A rechargeable cell that performs at least twenty-five discharge and charge cycles comprising: a cathode having an electrochemically active powder including an oxide of manganese; an anode comprising an anode composition, said composition comprising of an electrochemically active zinc alloy, wherein said composition is manufactured by a method comprising the steps of mixing said zinc alloy with an alkaline electrolyte solution, an organic surfactant, an indium compound, and a gelling agent, such that said indium compound is added in an alkaline environment; a separator including at least one semipermeable membrane; and an electrolyte solution in the separator, the cathode and the anode, and filling pores thereof.

Claim 60 (Original): The rechargeable cell of claim 59, wherein said indium compound is comprised of a first indium compound and a second indium compound.

Claim 61 (Original): The rechargeable cell of claim 60 wherein said first and second indium compound is selected from the group consisting of indium sulfate solution, indium sulfate powder, indium oxide solution, indium oxide powder, indium hydroxide solution, indium hydroxide powder, indium acetate solution, and indium acetate powder and any combination thereof.

Claim 62 (Original): The rechargeable cell of claim 60, wherein the indium compound makes up from about 0.05 to about 0.5% by weight of the electrochemically active zinc.

Claim 63 (Original): The rechargeable cell of claim 59, wherein said anode composition further comprises a nucleation additive selected from the group consisting of magnesium oxide,

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magnesium hydroxide, calcium oxide, calcium hydroxide, zirconium oxide, or any combination thereof.

Claim 64 (Original): The rechargeable cell of claim 63, wherein said nucleation additive is present up to 2.5% by weight of the anode.

Claim 65 (Original): The rechargeable cell of claim 59, wherein said electrochemically active zinc material comprises a metallic zinc or a zinc alloy.

Claim 66 (Original): The rechargeable cell of claim 59, wherein said organic surfactant is present in the range of from about 0.1% to about 0.25% by weight of said electrochemically active zinc material.

Claim 67 (Original): The rechargeable cell of claim 59, wherein said alkaline electrolyte comprises an aqueous solution of potassium hydroxide having a concentration of about 5.5 molar to about 12 molar.

Claim 68 (Original): The rechargeable cell of claim 67, wherein said electrolyte is added in a first and second portion.

Claim 69 (Original): The rechargeable cell of claim 66, wherein said first portion of said electrolyte is about 100% of total volume of electrolyte.

Claim 70 (Original): The rechargeable cell of claim 68, wherein said first portion of said electrolyte is between about 20% and about 60% of total electrolyte volume.

Claim 71 (Original): The rechargeable cell of claim 70, wherein said first portion of said first portion of said electrolyte is about 40% of total volume of said electrolyte.

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Claim 72 (Original): A rechargeable cell that performs at least twenty-five discharge and charge cycles comprising: a cathode having an electrochemically active powder including an oxide of manganese; an anode comprising an anode composition, said composition comprising of an electrochemically active zinc material, wherein said composition is manufactured by a method comprising the steps of: (a) mixing said zinc material with an organic surfactant; (b) mixing said zinc material with a first indium compound; (c) mixing said zinc material with a first portion of an alkaline electrolyte; (d) mixing said zinc material with a second indium compound; and (e) mixing said zinc material with a second portion of said electrolyte and a gelling agent; a separator including at least one semipermeable membrane; and an electrolyte solution in the separator, the cathode and the anode, and filling pores thereof.

Claim 73 (Original): The rechargeable cell of claim 72, wherein steps (a) and (b) are performed simultaneously.

Claim 74 (Original): The rechargeable cell of claim 72, wherein said first and second indium compound is selected from the group consisting of indium sulfate solution, indium sulfate powder, indium oxide solution, indium oxide powder, indium hydroxide solution, indium hydroxide powder, indium acetate solution, and indium acetate powder and any combination thereof.

Claim 75 (Original): The rechargeable cell of claim 74, wherein said first and second indium compound make up from about 0.05% to about 0.5% by weight of the electrochemically active zinc material.

Claim 76 (Original): The rechargeable cell of claim 72, wherein said anode composition further comprises a nucleation additive selected from the group consisting of magnesium oxide, magnesium hydroxide, calcium oxide, calcium hydroxide, zirconium oxide, or any combination thereof.

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Claim 77 (Original): The rechargeable cell of claim 76, wherein said nucleation additive is present up to 2.5% by weight of the anode.

Claim 78 (Original): The rechargeable cell of claim 72, wherein said electrochemically active zinc material comprises metallic zinc or a zinc alloy.

Claim 79 (Original): The rechargeable cell of claim 72, wherein said organic surfactant is present in the range of from about 0.1% to about 0.25% by weight of said electrochemically active zinc material.

Claim 80 (Original): The rechargeable cell of claim 72, wherein said first and second portion of said alkaline electrolyte comprises an aqueous solution of potassium hydroxide having a concentration of about 5.5 molar to about 12 molar.

Claim 81 (Original): The rechargeable cell of claim 80, wherein said first portion of said electrolyte is about 100% of total volume electrolyte.

Claim 82 (Original): The rechargeable cell of claim 81, wherein said first portion of said electrolyte is between about 20% and about 60% of total electrolyte volume.

Claim 83 (Original): The rechargeable cell of claim 82, wherein said first portion of said electrolyte is about 40% of total volume of said electrolyte.

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